

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

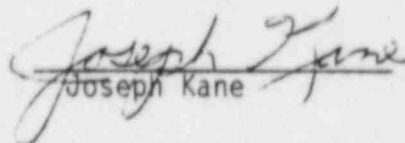
In the Matter of
CONSUMER POWER COMPANY
(Midland Plant, Units 1 and 2)

)
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) Docket Nos. 50-329 OM & OL
50-330 OM & OL

AFFIDAVIT OF JOSEPH KANE

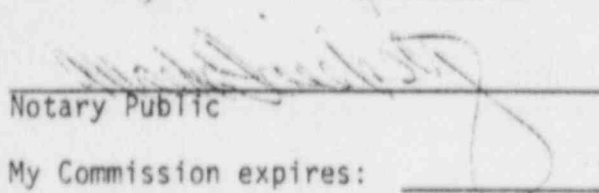
My name is Joseph Kane. I am a Senior Geotechnical Engineer with the Structural and Geotechnical Engineering Branch, Division of Engineering, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission. My professional qualifications and responsibilities with the Midland Project have been provided to the Atomic Safety and Licensing Board in previously submitted testimony.

The purpose of the attached response to the Board is to provide the NRC staff comments and evaluation on the significance of the information presented to the Board by Consumers Power Company in their letter of December 6, 1984. To the best of my knowledge and belief, the information contained in the attached response is correct.

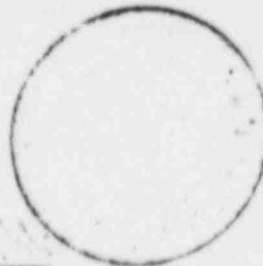

Joseph Kane

Subscribed and sworn to before

me this 21 day of April 1984


Notary Public

My Commission expires: 7/1/85



RESPONSE OF JOSEPH KANE TO THE ASLB
CONCERNING CONSUMERS POWER COMPANY'S LETTER
OF DECEMBER 6, 1984

The purpose of this Affidavit is to respond to the Board's question relative to the significance of the information provided in Consumers's letter to the ASLB of December 6, 1984 and to identify any impact of this information on previous staff evaluations and conclusions concerning an adequate margin of safety against liquefaction potential. This response was requested in a memo from W. Paton to G. Lear dated December 7, 1984 subject: Telephone Request from Judge Bechhoefer, Friday, December 7, 1984.

Consumers's letter of December 6, 1984 to the Board was necessary because of the Applicant's recent discovery that logs and laboratory testing data from four borings (B-1 through B-4) in the area of the diesel fuel oil tanks at the Midland Nuclear Plant, which had been provided to the NRC staff in FSAR documents, are now alleged to be logs and test results from borings taken elsewhere in Midland, but not at the nuclear plant site. Some of the questions which would naturally follow from this recent discovery would be directed at attempting to understand how this erroneous subsurface information was used by the Applicant and the staff in the design and review of the Midland Plant.

In its December 6, 1984 letter to the Board, Consumers indicates that 1) the only technical issue for the design of the Midland plant that is potentially affected is the liquefaction of soil below the diesel fuel oil tanks, 2) the Applicant's liquefaction witness, Dr. Richard Woods, performed his initial liquefaction analysis independent of the information from borings

B-1 through B-4 and did rely on Bechtel's analysis of liquefaction which used information from boring DF-5. (Boring [redacted] was drilled in September 1979, whereas borings B-1 through B-4 were [redacted] in July 1977.), 3) Dr. Woods eventually reviewed the erroneous information from borings B-1 through B-4 prior to his testifying in November 1982, but determined that information from borings B-1 through B-4 did not alter his previous conclusion on liquefaction potential, and 4) Consumers's technical staff did use information from boring B-1 to help reach the conclusion that a potentially liquefiable loose sand layer, as reflected by information from boring DF-5, was an isolated layer that did not extend beyond the immediate diesel fuel oil tank area. Because of the use of the information from boring B-1, Consumers has now determined that an analysis of liquefaction potential at the diesel fuel oil tank area is presently inconclusive.

The NRC staff offers the following comments on the significance of information provided by Consumers in their December 6, 1984 letter to the Board:

1. The staff would agree that the technical issue most affected by the information from borings B-1 through B-4 is the potential for liquefaction. It is not the only technical issue. In the past, the staff has used the subsurface information from borings B-1 through B-4 to assess the compacted density of the plant fill and to evaluate the adequacy of the foundation soils in the diesel fuel

oil tank area. The soil layering and blow counts reflected in the logs of borings B-1 through B-4 were used by the staff and its consultants along with other boring information to assist in accepting the placement of the concrete foundation pads for the diesel fuel oil tanks at elevation 612 feet.

2. I do not understand why Dr. Woods and Bechtel would not have used the information from borings B-1 through B-4 in their initial evaluation of liquefaction, since these borings were completed in 1977 and the subsurface information was available. I believe that it is more technically correct to state that subsurface information from these borings was considered but that the soil conditions below foundation elevation 612 feet as indicated on these borings did not reflect a liquefaction problem.
3. Consumers's technical staff did provide information to the NRC staff in April 1982 which used the subsurface information from the alleged erroneous borings B-1 through B-4 to conclude that the loose sand layer shown at boring DF-5 was not a continuous layer but likely an isolated pocket of loose silty sand fill. On the basis of the logs for borings B-1 through B-4, the staff accepted the Applicant's findings and conclusions and used this information as the basis for its testimony in the hearing sessions of November 22, 1982 (TR. 9799, 9780) and February 17, 1983 (TR. 12071 to 12073).

The staff would agree with Consumers's statement in their December 6, 1984 letter to the Board that the present circumstances, resulting from the recent discovery which questions the accuracy of information from borings B-1 through B-4, now makes the analysis of liquefaction potential at the diesel fuel oil tank area inconclusive.

The NRC staff has extreme difficulty in understanding how the mix-up occurred in presenting erroneous boring information from a location not at the plant site. This problem not only involves an error in exchange of boring logs but also involves the incorrect reporting of boring location coordinates on the logs and plotting on FSAR figures, reporting of elevations at top of borings and the sending of soil samples recovered in the field to the laboratory for testing. Should the Midland project be reactivated at a future date, the staff would require docketing of an explanation of how these unlikely events took place and the factual basis for concluding the originally submitted boring logs were not actually at locations previously submitted to the NRC in FSAR documents.

Because the staff does not have the borings logs and test results from the "real" borings, which information the Applicant appears to use in its response of December 6, 1984 to the Board, the staff is unable to fully evaluate the differences between the real and erroneous information for the foundation engineering considerations which are briefly discussed in comment no. 1 above.